FROM SCHOOL TO WORK

A Comparative Study of Educational Qualifications and Occupational Destinations

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Categorical and Continuous Scales and the Details of a Relationship

PAUL M. DE GRAAF AND WOUT C. ULTEE

INTRODUCTION: SCALES AND DETAILS

It has, somewhat facetiously, been remarked that there is a great divide in the literature on social stratification. On the one hand, there are various studies regarding the social scale as one long continuum. On the other hand, although two-class schemas are no longer used, a great many analyses still treat a society's structure as a limited number of discrete classes. Consequently research conducted against the background of the first assumption primarily employs linear regression techniques, and research involving the second assumption log-linear models and multinomial logistic regression techniques. Linear regression was quite influential in the 1960s (Duncan and Hodge 1963) and yielded the status attainment model. Recently, log-linear modelling has been on the ascent (Erikson and Goldthorpe 1992). This type of analysis has resulted in a core model of social fluidity for industrial societies in general, with distinctive deviations from this model for particular combinations of certain classes in specific countries. Log-linear techniques are applied when studying an association between two categorical variables without assuming one variable being a condition for the other; when various variables are assumed to cause a variable comprising more than two categories, multinomial logistic regression techniques are favoured.

Status attainment models were initially criticized as being too concerned with testing hypotheses holding that some individual characteristic accounts for a person’s occupational status. That is, these models were deemed individualistic. At one time it also was held that log-linear models describe a country's mobility pattern and for that reason are holistic.
However, as Hauser (1978: 922) remarked, 'the important distinction is not between units of analysis, but between levels of measurement and of detail.' Status attainment models also depict what is going on in a society, since 'a scalar measure of association between status variables is no less an indicator of "mobility structure" than is a set of coefficients pertaining to the interior cells of a mobility table'. Erikson and Goldthorpe's finding of a core model of social fluidity with specific deviations for particular classes in certain countries has made clear that the relation within a country between the origin and the destination of its inhabitants cannot be summarized by a single measure, as in status attainment models. The core model of social fluidity comprises several parameters, and to apply this model fruitfully to specific countries, additional parameters have to be introduced.

Accepting the value of testing the hypothesis that the relation between origin and destination can be summarized with only a single parameter, against the hypothesis that several parameters are necessary to characterize it, the question arises of how to describe the relation between origin and education and the relation between education and destination. After all, a status attainment model not only incorporates measures for social origin and destination, but also for education, the variable supposed to mediate between origin and destination. The question of how to capture for various contemporary industrial countries the relation between origin and education has been addressed by Shavit and Blossfeld (1993). This chapter addresses the question of what is gained for the contemporary Netherlands if the relation between the education and the destination of its inhabitants is not captured by a single parameter of a model regressing a continuous variable on a continuous variable, but is instead summarized into several parameters of a model regressing a polytomous variable on a polytomous variable. As middle cases we consider the regression of a continuous variable on several dichotomies, and the regression of a polytomous variable on a continuous variable. The data analysed cover those who left school less than ten years ago, and pertain to the period around 1990. The latter restriction was made so as to focus the transition from education to occupation.

Our interest in this question is not simply methodological, but primarily substantive. A perusal of the International Standard Classification of Occupations by the International Labour Office (ILO 1990) makes clear that both a continuum as well as some polychotomy might be projected behind its zillion occupational titles. However, a glance at for instance the International Standard Classification of Education devised by the United Nations Educational, Scientific and Cultural Organization (UNESCO 1976) suggests that a schema comprising a limited number of categories might be more appropriate than some continuous scale. Education has a limited number of levels—lower, intermediate, higher—and within levels usually no
more than two directions—general and vocational—are distinguished. Any attempt to turn such a classification into a more or less continuous scale pertaining to, say, the number of years usually spent in school to obtain certain credentials, masks possible differences which merit empirical study rather than automatic elimination. Indeed, one guess is that when analysing the relation between education and occupation within a country at some point in time, those with vocational education are placed more tightly into some slot of a country's occupational structure than those with a general education.

**TRENDS IN DUTCH STRATIFICATION**

Recent quantitative studies of long-term changes in the Dutch stratification system almost without exception have led to the conclusion that this system has become more open (Ganzeboom and Luijkx 1995). The association between father's and sons' occupational prestige—as measures on a prestige scale from the 1950s—has decreased gradually between 1954—the first year for which a prestige table is available—and the early 1990s. The association between father's social class and sons' social class according to the class schema of Erikson, Goldthorpe, and Portocarero (1979) has decreased since 1970, the first year for which a class table can be constructed.

Status attainment models distinguishing the Dutch population into cohorts born since World War I (De Graaf and Luijkx 1995) have led to the conclusion that both for men and women the direct effect of father's occupational status on their level of education has decreased, and the direct effect of father's occupational status on the occupational status of these men and women has almost completely disappeared. The effect of social background on education weakened gradually from the turn of the century onwards, telling against hypotheses holding that specific legal changes had straightforward effects. For men, the direct effect of education on occupation increased, for women it slightly decreased. The explanation proffered for the finding that for women the relation between education and occupation has become weaker invokes a selective increase of the labour-force participation of Dutch women. These status attainment models regressed continuous variables for occupation on continuous variables for education.

Erikson and Goldthorpe applied their core model of social fluidity to a Dutch father-son class mobility table for the 1980s. They found some indications that the Dutch pattern of fluidity is distinctive: there was more mobility than predicted by the core model between the routine non-manual class and the service class, and less mobility than expected between the non-skilled industrial workers and the routine non-manual classes (Erikson and
Goldthorpe 1992: 171). In a study of thirteen industrial countries, the Netherlands and Sweden were the only ones to show in recent decades a decreasing relation between origin and education, with education being taken as a categorical variable and origin as a continuous variable (Shavit and Blossfeld 1993).

Until now, models of the relation between education and occupation in the Netherlands deployed continuous measures. Given models for this country of the relation between origin and destination and between father's occupation and education involving categorical variables, it is desirable for the Netherlands to establish the relation between education and occupation as obtained with categorical variables for education and occupation, and compare it with the association between education and occupation as measured on continuous scales. This comparison is the aim of this chapter.

Given Erikson and Goldthorpe's (1992) seminal study, it is obvious that in the present analysis the classes making up a country's social structure will be distinguished by way of the schema developed by Erikson and Goldthorpe. As a standard for levels of education, a schema recently developed by Müller et al. (1989) has been proposed. In the following section we gauge the applicability of this classification as part of a review of the history of Dutch educational institutions. This is followed by a description of the institutions underpinning the Dutch labour market, especially the institutions governing the transition from school to work. We then go on to outline the nature of our Dutch data, and take a brief look at the relation between education and employment. Subsequently, we model the relation between education and destination by linear-regression techniques, and apply logistic models to characterize the relation between education and destination using social origins as a control variable, before going on to discuss our results in the concluding section.

EDUCATION IN THE NETHERLANDS

In the sixteenth century the Low Countries—then ruled by Spanish kings—became the first colony ever to become politically independent of an imperial power, when a combination of a religious protest and a tax revolt led to the formation of the Republic of the Seven United Dutch Provinces. The political ascent of the Dutch Republic went hand in hand with the emergence of Amsterdam as the centre of the emerging world economy (Wallerstein 1974), and the flowering of the Dutch system of what now is called tertiary education. The emphasis placed by Protestantism on the need for all believers to be able to read the Bible for themselves probably accounts for the fact that primary schooling was widespread in the Dutch Republic.
The main change in the Dutch educational system during the nineteenth century was a reform of secondary education. The Dutch secondary education was traditionally built around Latin and Greek which were prerequisites for university entry, but in the 1850s, the Dutch Government founded the *Hogere Burger Scholen*, a type of secondary education more attuned to the demands of commerce and industry and consisting of modern languages, mathematics, and physics.

In the twentieth century, three changes must be mentioned. The first regarded school financing. In the nineteenth century, primary schooling was state funded. Schools taught—apart from arithmetic, reading, history, and geography—Christian virtues, but since most schools were attended by both Protestants and Catholics, Bible reading was not always part of the curriculum. This motivated orthodox Protestants and Catholics, Bible reading was not always part of the curriculum. This led to the so-called *Schoolstrijd*, an issue that was settled during World War I with the introduction of full state financing of 'special schooling' (Lijphart 1968). The number of pupils attending these schools increased rapidly, from about 30 per cent of all primary school pupils in 1900, to about 45 per cent in 1920, and to 70 per cent in 1938.

The second change was the introduction of an umbrella law on education, the *Mammoetwet*, at the end of the 1960s (Dronkers 1983). Although this law did not do away with selection of students at the end of primary school (at the age of 12) for the three types of secondary school (lower vocational, intermediate general, and higher general education (academic and non-academic)), it did provide new ways of moving within and between levels, and gave vocational education a more prominent place compared with general education. The structure of the present Dutch system of education is shown in Figure 11.1.

As regards subjects taught at intermediate level and the occupations catered for by vocational schooling, in vocational schools of whatever level, general schooling is included such as foreign languages and mathematics—the former sometimes being geared to specific vocations. Students at all types of schools have a great deal of choice in examination subjects.

In lower vocational schooling an effort was made to cater to both the industrial (welding, bricklaying, decorating, and tailoring) and service sectors (care of the elderly, baking and confectionery making, and retail clothes selling). Intermediate vocational education may consist of car maintenance, producing chemical reactions and surveying chemical processes, bookkeeping, stock management, and salary administration. Higher vocational education comprises nursing, training for naval officers, social work and teaching. Engineering in the sense of design and calculation is taught in technical universities; supervision and execution of the construction of roads and boats is taught in intermediate vocational schools. Most vocational schools
do not simply have various shorter periods of apprenticeship outside school with an employer, but so-called practice-years. In the councils overseeing the various types of vocational education, employer organizations are represented. At the tertiary level, universities are a curious mix of vocational (engineering, law, and medicine) and classical (history, languages, etc.) studies. Current school-leaving age in the Netherlands is 16 years. Until the age of 18, working adolescents attend compulsory schooling for several days a week organized by their employment branch.

The third change regards the gradual lowering of the financial barriers to post-compulsory education. Prior to World War II, fees were not payable for secondary schooling, and schools funded books for special social categories. During the post-war period, a grants system was introduced for the children of low-income parents studying at university, and high-income parents could obtain tax breaks if their children remained in post-compulsory education. Since the 1980s, all people aged 18 or over in any type of education have been entitled to a grant covering the living and studying costs. This system was subsequently tightened up by lowering the number of years for which a...
grant could be obtained, partial replacement of grants by loans, and proof of progress while being registered at a school.

This overview of the Dutch educational system and the way it took its present shape, indicates that although it confronts students with a large number of choices, it also allows for flows between its various levels. A hypothesis about this feature might hold that the gradient of the relation between education and occupation will not show sharp breaks. This review also suggests that if a core pattern of the relation between education and occupation were proposed for contemporary industrial societies using the schema of levels of education proposed by Müller and his colleagues for international comparisons (Müller et al. 1989), the Netherlands would show particular specifications of this pattern. The schema most fundamentally has three sub-levels: primary, secondary, and tertiary education. The primary level consists of three levels: inadequate completion of primary education (1a); completed primary education (1b); and primary education plus some vocational training (1c). At the secondary level, there are three sub-levels: some intermediate general education plus additional vocational education (2a); full intermediate general education not leading to academic education (2b); and higher secondary education leading to academic education (2c). At the tertiary level there are two sub-levels: higher vocational education (3a); and academic education (3b).

When applied to the Netherlands, this international schema seems to place Dutch secondary lower vocational education below Dutch secondary intermediate general education. In addition it gives Dutch intermediate general education and Dutch intermediate vocational equal ranking. However, the rules of the Dutch educational system are such that secondary lower vocational education (1c), more or less equals intermediate general education (2b), and that intermediate vocational education (2a), is above intermediate general education (2b). After primary school, the choice is between lower vocational education, intermediate general education, and higher general education. After lower vocational education people may enter the labour market, but they also may continue into intermediate vocational education. In addition, after intermediate general education, people may start working, continue into intermediate vocational education, or enter higher general education. The relations between the Dutch system of education and the schema of Müller and colleagues are indicated in the last column of Figure 11.1.

THE DUTCH LABOUR MARKET AROUND 1990

Educational expansion has been very strong in the Netherlands and the upgrading of the labour market has not kept the same pace (Huijgen 1989).
Although the proportion of jobs requiring higher education has grown and the average job level of the younger generations has generally increased, the value of all educational qualifications has decreased at the same time, with the value of lower level qualifications dropping more rapidly than that of higher level credentials. Those with higher level qualifications have moved into jobs previously reserved for the less educated, while those with the lowest qualifications have been pushed into badly paid and insecure jobs, or unemployment. Although it is difficult to predict which developments will take place in the coming years, these trends are likely to continue. The value of educational qualifications will corrode, and especially so for the newcomers with the lowest qualifications.

One feature of the present Dutch labour market contrasts somewhat with the marked devaluation of the lowest qualifications and the smaller devaluation of higher level qualifications. This is the high unemployment rate among those with tertiary academic education in the population at large. As of the early-1990s, the unemployment rate for university graduates has been higher than that for people with higher or intermediate vocational education. A prime hypothesis about these differences is that universities cannot refuse students unless explicitly authorized by the Ministry of Education, whereas intermediate secondary and higher vocational schools may do so on their own, and in actual fact do refuse students in this manner. Another hypothesis is that the high unemployment rate itself prolongs educational careers for want of job prospects. Indeed, the unemployment rate for those leaving school without a qualification is lower than for those leaving school with a qualification. A third explanation is that, with cutbacks on government spending, the universities, as the prime pool for (semi-)government employees, have suffered most.

This somewhat unexpected relationship between education and unemployment is one of several developments in the Netherlands since the 1980s that made clear that the institutions regulating the Dutch labour market presumed full employment and that these institutions have to be changed to cope with a situation of structurally high unemployment and to ward off the emergence of a two-tier society.

Judging by its unemployment rate, the Netherlands weathered the first oil shock of the 1970s quite well, whereas the second oil shock of the early 1980s was accompanied by a dramatic rise in the unemployment rate. Whereas the unemployment rate was below 5 per cent at the end of the 1970s, according to the European Union definition it was 8.1 per cent in 1981, 11.9 per cent in 1983, 12.4 per cent in 1984, and 10.5 per cent in 1985 (the corresponding percentages for the EU—10 being 7.0, 8.9, 9.4, and 9.5). What a lot of people guessed at that time, and what became authoritative after a parliamentary inquiry in the early 1990s, was that the official unemployment rate.
understated the prevalence of unemployment, the main reason being that older workers facing lay-off were declared disabled.3

The brunt of structurally high unemployment was borne by young people. First, because given the strong influence of trade unions and work councils in employer-employee relations, in leaner times a policy of no firing and no hiring was followed. Second, because until the early 1980s the relative position of young people in Dutch society had been improving. This happened as a consequence of a lowering of the voting age from 23 during most part of the twentieth century, to 21 in 1967, and 18 in 1972. In an attempt to incorporate young people into the political system, regulations stipulating lower wages for those under a certain age were scrapped, regulations with respect to the chances of obtaining a stipend for studies become easier with the amount of money awarded by a stipend increasing, and social-security regulations were changed so that school-leavers who did not immediately find work, obtained state benefits for an indefinite period without a lot of strings attached to them. This strong position of young people vis-à-vis the Dutch welfare state system has to some extent been responsible for high levels of youth unemployment. In addition, it became much easier for young people to leave the parental home as social housing programmes allocated housing to single persons and allowed them to draw rent subsidies if their income was below a certain level. At the end of the 1980s, in an effort to clamp down on the cost of social security and youth unemployment, these regulations began to change. Young people to some extent had responded to the structurally high unemployment rate by extending the period they attended school, and thus postponing unemployment and increasing government expenditure on educational grants. The official number of years necessary to complete a university programme was lowered from five to four in the second part of the 1980s, and the system of educational grants became decidedly less liberal in the 1990s. Starting around 1990, school-leavers who did not find work were more often pressed by governmental employment offices into work-experience places, made available by employers as a part of collective bargaining. In addition, in an attempt to entice employers, in collective wage agreements youth wages were reintroduced. In addition, the level of unemployment and disability benefits was lowered, as well as the length of the period people could claim unemployment benefits. People under the age of 50 in disability schemes are re-examined, with the definition of a suitable other job having widened. Until now, the Minister of Education still has not seduced the universities into a stronger selection of students. This would be something of a feat in times where the absolute number of students for demographic reasons is falling and universities are being paid for both the number of students entering university and the number of students obtaining a degree.
Two sets of data are analysed in this analysis. The first set is taken from the Netherlands Mobility File 1985–1992, a collection of smaller surveys undertaken for various purposes in these years comprising major variables in status attainment research and class analysis. We selected from this file all those with less than ten years out of school and ever employed. This resulted in rather small data set for 1,021 men and 1,084 women. This perhaps somewhat heterogeneous file contains variables on social origin and will be used mainly for the purpose of estimating the effects of family background. The second and more reliable set of data is extracted from the Labour Market Survey 1991 undertaken on a permanent basis by the Netherlands' Bureau of Statistics (CBS) to establish, among others, the structure of the Dutch labour market and the monthly unemployment rate for the Netherlands. It comprises 7,199 men and 7,663 women which left school less than ten years ago and which are not drafted into the military. Of these men, 6,499 are currently employed, and of these women 5,864. This comparably coded file lacks data on social origins. Our research strategy will be to employ the Netherlands Mobility File just to find out whether the omission of social origins in the Labour Market Survey of 1991 biases our findings on the value of education.

Table 11.1 presents the frequency distributions for educational attainment for both the Netherlands Mobility File and the Labour Market Survey 1991. For the latter survey the table presents distributions for all those who left education between 1981 and 1991, and for a selection of persons who are currently employed. We distinguish between primary education (la), lower vocational secondary (1c), intermediate vocational secondary (2a), intermediate general secondary (2b), higher secondary general (2c), higher vocational (3a), and academic education (3b). The table makes clear that a large proportion of those who finished their educational careers in the 1980s have had vocational training. According to the Labour Market Survey of 1991 only about 22 per cent of the men and about 27 per cent of the women have no vocational training. The average educational attainment of employed persons is higher than the educational attainment of the whole sub-population which left school between 1981 and 1991, which shows that the probability to be employed is dependent on schooling.

A further inspection of Table 11.1 makes clear that the Netherlands Mobility Survey 1985–1992 sample somewhat over-represents those with higher levels of education. As a result, especially the category with intermediary vocational training is under-represented in the file. We do not know to what extent this is due to a response bias or to coding difficulties. It has
### Table 11.1. Distribution of educational attainment according to Labour Market Survey (CBS/EBB 1991) and Netherlands Mobility File (NMF 1985–1992)

<table>
<thead>
<tr>
<th></th>
<th>Labour Market Survey 1991 selection: less than ten years after leaving school, not in military service</th>
<th>Labour Market Survey 1991 selection: less than ten years after leaving school, not in military service</th>
<th>Mobility File 1985–1992 selection: less than ten years after leaving school, not in military service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>men</td>
<td>women</td>
<td>men</td>
</tr>
<tr>
<td>1ab: elementary</td>
<td></td>
<td></td>
<td>9.0%</td>
</tr>
<tr>
<td>(BO: Basis Onderwijs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1c: lower vocational</td>
<td></td>
<td></td>
<td>22.4%</td>
</tr>
<tr>
<td>(LBO: Lager Beroeps Onderwijs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>31.9%</td>
<td>35.4%</td>
<td>33.5%</td>
</tr>
<tr>
<td>(MBO: Middelbaar Beroeps Onderwijs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>7.5%</td>
<td>11.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>(MAVO: Middelbaar Algemeen Voortgezet Onderwijs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2c: higher general</td>
<td>5.9%</td>
<td>7.7%</td>
<td>5.7%</td>
</tr>
<tr>
<td>(HAVO: Hoger Algemeen Voortgezet Onderwijs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>14.6%</td>
<td>18.3%</td>
<td>15.2%</td>
</tr>
<tr>
<td>(HBO: Hoger Beroeps Onderwijs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b: university</td>
<td>8.6%</td>
<td>4.8%</td>
<td>8.8%</td>
</tr>
<tr>
<td>(WO: Wetenschappelijk Onderwijs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of individuals</td>
<td>7,199</td>
<td>7,663</td>
<td>6,499</td>
</tr>
</tbody>
</table>

To be said that the present schema for coding educational qualifications presses older and newer types of education into one, and that the Dutch Central Bureau of Statistics partly for that reason abandoned computer coding of educational qualifications. It is likely that this merged file consists of files with different coding procedures. We must rely on the assumption that
the relationship between family background, educational attainment and occupational achievement will not be biased.

EDUCATION AND EMPLOYMENT

Before analysing the relation between education and early occupation in the Netherlands around 1990, it might be good to have a quick look at the relation between education and various aspects of employment in our samples. What is the relationship between educational attainment and employment status, that is, being employed, unemployed, or outside the labour market?

In order to answer this question, our Labour Market Survey 1991 sample is broken down in Table 11.2 by sex, education, and current employment status. We observe that the employment status is strongly associated with educational attainment. For both men and women, the categories with only general training (lab, 2b and 2c) show the highest probabilities of being out of the labour force. Women of whatever level of education are less likely to be currently employed than men. At all levels of education, women who have left school less than ten years before, are more likely than men to be outside the labour force. About 25 per cent of all women and about 3 per cent of all men who left school between 1981 and 1991 are out of the labour force.

As expected, we observe that for both men and women who left school less than ten years ago, unemployment is strongly associated with educational attainment. Unemployment rates are highest among those with primary school only, and lowest among those with intermediate or higher vocational education. In general, vocational training (categories 1c, 2a, and 3a) protects against unemployment, but university training (3b) offers lower employment probabilities than higher vocational training (3a). We argued that in the Netherlands there is no feedback process which limits participation in university education in times of labour-market saturation for academics, whereas such processes do exist for intermediate and higher vocational programmes. It is striking that even among those with lower vocational schooling (finished at the age of 16) unemployment is lower than among university graduates.

In Table 11.3 these findings are refined by a multinomial logit regression analysis. The table shows the effects of education on the log odds to be employed or unemployed relative to the log odds to be out of the labour market. The advantages of vocational training are clear, but the specific level of vocational training seems to be unimportant. The table also shows that the association between educational attainment and unemployment and the association between education and a position out of the labour market are comparable. Only a university degree gives a higher probability of being
<table>
<thead>
<tr>
<th>Educational attainment</th>
<th>1ab</th>
<th>1c</th>
<th>2a</th>
<th>2b</th>
<th>2c</th>
<th>3a</th>
<th>3b</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>74.0%</td>
<td>93.9%</td>
<td>96.1%</td>
<td>85.8%</td>
<td>88.5%</td>
<td>95.2%</td>
<td>93.1%</td>
<td>92.0%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>15.5%</td>
<td>4.6%</td>
<td>2.8%</td>
<td>8.1%</td>
<td>5.2%</td>
<td>3.0%</td>
<td>5.3%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Not in labour force</td>
<td>10.5%</td>
<td>1.6%</td>
<td>1.1%</td>
<td>6.1%</td>
<td>6.3%</td>
<td>1.8%</td>
<td>1.6%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Number of individuals</td>
<td>650</td>
<td>1,610</td>
<td>2,298</td>
<td>543</td>
<td>426</td>
<td>1,050</td>
<td>622</td>
<td>7,199</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>35.9%</td>
<td>63.6%</td>
<td>81.6%</td>
<td>63.4%</td>
<td>76.1%</td>
<td>75.0%</td>
<td>82.5%</td>
<td>71.7%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>7.2%</td>
<td>4.7%</td>
<td>2.6%</td>
<td>3.0%</td>
<td>3.7%</td>
<td>3.6%</td>
<td>6.0%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Not in labour force</td>
<td>56.9%</td>
<td>31.7%</td>
<td>15.9%</td>
<td>33.6%</td>
<td>20.2%</td>
<td>20.5%</td>
<td>10.7%</td>
<td>24.6%</td>
</tr>
<tr>
<td>Number of individuals</td>
<td>615</td>
<td>1,130</td>
<td>2,716</td>
<td>842</td>
<td>590</td>
<td>1,405</td>
<td>365</td>
<td>7,663</td>
</tr>
</tbody>
</table>

Selection: less than ten years after leaving school, not in military service, no missing information
Source: Labour Market Survey 1991 (EBB/CBS)
unemployed (and seeking employment), as compared to being out of the labour market (i.e. unemployed and not seeking employment), especially for women. This may suggest that people with university degrees do not accept a position out of the labour market and prefer to be unemployed, even if this does not bring them unemployment allowances.

**Table 11.3. Effects of educational attainment on employment status, relative to being out of the labour market, multinomial logit models**

<table>
<thead>
<tr>
<th></th>
<th>Employed</th>
<th>Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men (N = 7,199)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.870</td>
<td>0.260</td>
</tr>
<tr>
<td>1b: elementary</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>1c: lower vocational</td>
<td>1.919</td>
<td>0.504~</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>2.243</td>
<td>0.299~</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>0.739</td>
<td>0.064~</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>0.573</td>
<td>-0.468~</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>2.261</td>
<td>0.605~</td>
</tr>
<tr>
<td>3b: university</td>
<td>1.991</td>
<td>0.944</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Chi(^2)</td>
<td>318.6</td>
<td></td>
</tr>
<tr>
<td>Women (N = 7,663):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.475</td>
<td>-1.963</td>
</tr>
<tr>
<td>1b: elementary</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>1c: lower vocational</td>
<td>1.147</td>
<td>0.094~</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>2.068</td>
<td>-0.049~</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>1.090</td>
<td>-0.189~</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>1.739</td>
<td>0.439~</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>1.690</td>
<td>0.052~</td>
</tr>
<tr>
<td>3b: university</td>
<td>2.330</td>
<td>1.353</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Chi(^2)</td>
<td>608.2</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Out of labour force is the reference category.

*Selection:* less than ten years after leaving school, no missing information

~ denotes insignificance (p > .05)

* denotes reference category


Table 11.4 displays cross-tabulations of the sample by sex, education, and having a temporary or indefinite work contract, and by sex, education, and having a part-time or full-time job (working less or more than thirty-four hours). This table shows the labour-market attachment by education and sex. According to the first panel of Table 11.4, the number of men with a tem-
### Table 11.4. Labour-force attachment by educational attainment and sex

<table>
<thead>
<tr>
<th>Educational attainment</th>
<th>Number of individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1ab</td>
</tr>
<tr>
<td>Proportion with temporary job:</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>14.0%</td>
</tr>
<tr>
<td>Women</td>
<td>12.5%</td>
</tr>
<tr>
<td>Proportion with part-time job (less than 34 hours):</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>9.3%</td>
</tr>
<tr>
<td>Women</td>
<td>40.3%</td>
</tr>
</tbody>
</table>

*Selection: less than ten years after leaving school, employed (not self-employed or working family member), no missing information*

*Source: Labour Market Survey 1991 (EBB/CBS).*
porary job as a percentage of all employed men hardly differs at all from the proportion of employed women. The lowest proportion can be observed among those with vocational education. For both men and women the proportion with a temporary job is highest among those with an academic qualification. Once more it is clear that those with vocational training—irrespective of level—are the most in demand on the labour market.

The second panel of Table 11.4 shows that women are more likely to have a part-time job than men, which of course is a result of women’s responsibilities for childcare. In the Netherlands most women have full-time jobs after they finish education, but almost none of them continue to work in full-time jobs after they have got their first child (De Graaf and Vermeulen 1997), with no exception for the higher educated. The proportions of women in part-time jobs presented in this table therefore resemble the relationship between educational attainment and the timing of the first child, and the suggestion of a strong connection of part-time work to educational attainment is not warranted. The same holds for men: the proportion of men with a part-time job does not seem to be associated strongly with educational attainment, although we see that those with general education (1a, 2b, 2c) and university training have a greater likelihood of entering part-time jobs. To sum up, those with vocational education have a higher labour-force attachment. No level stands out with respect to weak labour-force attachment, although the opportunities for those with low or intermediate general education and for university graduates are relatively small.

EDUCATION AND LEVEL OF OCCUPATION

In Table 11.5 we present the mean occupational prestige for the seven educational categories for both men and women, for both the Labour Market Survey 1991 and the Mobility File 1985–1992. Educational categories again are ranked according to the CASMIN schema for international comparisons. Prestige scores were assigned to occupational titles according to a scale developed for the Netherlands by Sixma and Ultee (1984). This scale ranges from thirteen for occupations with the lowest prestige to eighty-seven for occupations with the highest prestige.

In each of the four distributions, the gradient of the relation between levels of education and occupation prestige is less than fully smooth. As expected, in all four cases, those with low education (1ab and 1c) have less occupational prestige than those with the intermediate level of education (2a, 2b and 2c), whereas those with higher education (3a and 3b) have the highest occupational prestige. Within the intermediate and high-level categories some differences can be observed, but on the lowest level we observe that
the average prestige of those with only primary education and those with low vocational training are very much alike. At the intermediate level, general education gives the smallest returns, followed by vocational training and higher general training. Intermediate vocational training (2a) clearly offers better labour-market opportunities than an intermediate general education (2b). This is hardly surprising because it takes three or four extra years of schooling to finish intermediate vocational training than intermediate general education. Intermediate vocational training and intermediate general education are both finished approximately at age 18 or 19. At the highest level of education we see that university education brings higher prestige jobs than higher vocational training.

**TABLE 11.5. Mean occupational prestige by education and sex**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>1a: elementary</td>
<td>27.6</td>
<td>30.0</td>
</tr>
<tr>
<td>1c: lower vocational</td>
<td>30.1</td>
<td>31.8</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>39.6</td>
<td>42.2</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>35.1</td>
<td>38.7</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>46.0</td>
<td>43.8</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>61.9</td>
<td>54.1</td>
</tr>
<tr>
<td>3b: university</td>
<td>70.0</td>
<td>67.3</td>
</tr>
<tr>
<td>All</td>
<td>42.7</td>
<td>43.8</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>19.8</td>
<td>16.2</td>
</tr>
<tr>
<td>Number of individuals</td>
<td>6,495</td>
<td>5,863</td>
</tr>
</tbody>
</table>

*Selection: less than ten years after leaving school, employed (Labour Market Survey) or ever employed (Mobility File), no missing information

*Occupational prestige: Dutch Ultee/Sixma prestige scale (Sixma and Ultee 1984)


Comparing men and women with the same level of education, we see that at the lower levels women have more occupational prestige than men, and at the higher levels less prestige than men. This is the result of the sex-specific occupational segregation: on average men and women have the same prestige, but women are concentrated in a relatively low number of occupations around the average. This corresponds to the lower standard deviation of the occupational prestige of women (16.2) when compared to the standard deviation of men (19.8). We regard the higher prestige for women with
university education compared with men with university education accord­
ing to the Mobility File 1985–1992 as a statistical fluke.

In Table 11.6 we regress, separately for men and women from our
Mobility File 1985–1992, occupational prestige on a dummy version of our
seven-level educational schema. In the first two columns we present the total
effects of family background on occupational prestige. In the third and
fourth columns no controls for father’s occupational prestige and father’s
education are included, and in the last two columns both family background
and educational attainment are taken into account. The models show that
family background effects on occupational prestige are intermediated com­
pletely by educational attainment. Between the equation with only educa­
tional attainment and the equation with controls for both education and
family background, the adjusted $R^2$ hardly improves and the coefficients for
the indicators for family background are insignificant. These results display
that the effects of educational attainment are not biased in the model with­
out family background, which implies that an analysis of the larger and more
representative Labour Market Survey 1991, which does not include variables
for social origin, will not be far off the mark.

Therefore, in Table 11.7 we return to the far larger and more reliable
Labour Market Survey 1991 and seek to establish the extent to which it is
possible when predicting occupational prestige, to replace the six dummy
variables for level of education by a continuous measure for the number of
years spent in school to obtain a certain level of education. Is it just the
length of the educational career which affects the level of the first job? The
number of years spent in education by people with a certain level of educa­
tion, is taken from Figure 11.1, giving each educational category the mini­
mum years of education to complete it.

The adjusted $R^2$ of the linear regression of occupational prestige on six
dummies for level of education for men is 0.467 and for women 0.310. When
the six dummies have been replaced by the measure for years of education,
the model deteriorates markedly, and the adjusted $R^2$ for men is 0.386 and
for women 0.260. A comparison of these adjusted $R^2$ implies that the rela­
tion between education and a continuously measured occupation, is better
described by a six-dummy version of educational attainment than by a con­
tinuously measured education. The parameter for years of schooling in Table
11.7 (columns b) indicates that one year of additional schooling has a return
of 4.19 points of occupational prestige for men and of 3.16 points for women.
This gender difference of about 25 per cent in the returns of schooling is
statistically significant.

The regression equations of Table 11.7 repeat the results of Table 11.5 in
which the mean occupational prestige score was broken down by educational
attainment. We observe that the difference in mean occupational prestige
Table 11.6. Effects of educational attainment on occupational prestige with and without controls for family background

<table>
<thead>
<tr>
<th>Education</th>
<th>Total family background effects</th>
<th>No controls for family background</th>
<th>Controls for family background</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>lab: elementary</td>
<td>—</td>
<td>—</td>
<td>0°</td>
</tr>
<tr>
<td>lc: lower vocational</td>
<td>—</td>
<td>—</td>
<td>−0.0°</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>—</td>
<td>—</td>
<td>10.4</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>—</td>
<td>—</td>
<td>8.2</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>—</td>
<td>—</td>
<td>14.9</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>—</td>
<td>—</td>
<td>25.6</td>
</tr>
<tr>
<td>3b: university</td>
<td>—</td>
<td>—</td>
<td>30.3</td>
</tr>
<tr>
<td>Father's prestige</td>
<td>0.17</td>
<td>0.15</td>
<td>—</td>
</tr>
<tr>
<td>Parents' education</td>
<td>1.03°</td>
<td>2.88</td>
<td>—</td>
</tr>
<tr>
<td>Intercept</td>
<td>36.6</td>
<td>35.1</td>
<td>32.1</td>
</tr>
<tr>
<td>R² adjusted</td>
<td>0.040</td>
<td>0.062</td>
<td>0.310</td>
</tr>
<tr>
<td>Number of individuals</td>
<td>684</td>
<td>693</td>
<td>684</td>
</tr>
</tbody>
</table>

Selection: less than ten years after leaving school, ever employed, no missing information

Occupational prestige: Dutch Ultee/Sixma prestige scale (Sixma and Ultee 1984)

° denotes insignificance (p > .05)

* reference category

TABLE 11.7. Effects of educational attainment on occupational prestige

<table>
<thead>
<tr>
<th>Education</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>l: elementary</td>
<td>0*</td>
<td></td>
</tr>
<tr>
<td>1c: lower vocational</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>7.5</td>
<td></td>
</tr>
<tr>
<td>2c: higher general</td>
<td>18.4</td>
<td></td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>34.3</td>
<td></td>
</tr>
<tr>
<td>3b: university</td>
<td>42.4</td>
<td></td>
</tr>
<tr>
<td>Years of education</td>
<td>4.19</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>27.61</td>
<td>-9.04</td>
</tr>
<tr>
<td>$R^2$ adjusted</td>
<td>0.467</td>
<td>0.386</td>
</tr>
<tr>
<td>Number of individuals</td>
<td>6,495</td>
<td></td>
</tr>
</tbody>
</table>

Selection: less than ten years after leaving school, employed, no missing information

Occupational prestige: Dutch Ultee/Sixma prestige scale (Sixma and Ultee 1984)

* denotes insignificance ($p > .05$)

* reference category


between the intermediate and the higher level is considerably larger than the difference between the lower and the intermediate level. On the lowest level of education there is only a small difference in occupational prestige between those with only primary education and those with low vocational training. On the intermediate level higher general education appears to be superior to intermediate vocational education, which takes about the same number of years of schooling, whereas intermediate general education is inferior. On the highest level, university training gives access to higher prestige jobs than higher vocational training. It is clear that the relationship between educational credentials and occupational prestige is not equal to the relationship between educational attainment and employment rates. Whereas vocational training gives better chances to find a job, it does not bring higher job levels. This last conclusion is limited to the lower and intermediate levels of education, because at the higher level the distinction between general and vocational training cannot be made.

All in all, it has to be said that a depiction of the relation between education and occupational prestige by way of dummies for level of education yields a more detailed picture than by way of a variable for years spent in education. In the Netherlands, the relationship between occupational pres-
Education and Occupation

Table 11.8 and 11.9 report on a multinomial logit model applied to the sample from the Mobility File 1985–1992, in which it is possible to control for family background. In these the seven levels of education are cross-classified against a five-class version of the schema developed by Erikson, Goldthorpe and Portocarero (1979). Class I/II is the service class, and Class III refers to the routine non-manuals; Class IVabc refers to the small self-employed (farmers and petty bourgeoisie); Class V/VI are the skilled manual occupations, and Class VIIab (the reference category in the model) refers to the semi-skilled and unskilled manuals.

Table 11.8 shows the total effects of father’s class on first occupational class. The probability of entering the service class is dependent on having a father in this class. All other classes are not different with regard to the odds of finding a first position in the service class. The probability of having a first job in the routine non-manual class is clearly lower for the sons and daughters from manual origins. The odds of obtaining a position in the self-employed class is especially affected by having a father in this class. No immobility effects can be observed for the skilled manual class.

In Table 11.9 we add educational attainment to the model. The prime purpose of Table 11.9 is to establish the consequences of the omission of father’s class in later models for the relation between education which are based on the Labour Force Survey 1991. For men, 14 of the 16 coefficients for father’s class turn out to be insignificant, and for women 10 out of the 16. Given these findings, we can safely assume that the effects of educational attainment on occupational class are not seriously biased by the absence of family background and we can limit attention to multinomial logit models for tables taken from the Labour Market Survey 1991 file. The few significant effects show that some direct class inheritance effects are present,
Paul M. De Graaf and Wout C. Ultee

**Table 11.8. Total effects of father’s class on occupational class, relative to Class VIIab, multinomial logit models**

<table>
<thead>
<tr>
<th></th>
<th>I/II</th>
<th>III</th>
<th>IVabc</th>
<th>V/VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept Men (N = 1,021)</td>
<td>0.083</td>
<td>-0.550~</td>
<td>-2.079</td>
<td>-0.314</td>
</tr>
<tr>
<td>Father’s class:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I/II</td>
<td>1.023</td>
<td>0.381~</td>
<td>0.114~</td>
<td>-0.010~</td>
</tr>
<tr>
<td>III</td>
<td>0.381~</td>
<td>1.043</td>
<td>0.359~</td>
<td>-0.053~</td>
</tr>
<tr>
<td>IVabc</td>
<td>0.114~</td>
<td>0.359~</td>
<td>1.988</td>
<td>-1.198~</td>
</tr>
<tr>
<td>V/VI</td>
<td>-0.010~</td>
<td>-0.053~</td>
<td>-0.475~</td>
<td>0.314~</td>
</tr>
<tr>
<td>VIIab</td>
<td>0\a</td>
<td>0\a</td>
<td>0\a</td>
<td>0\a</td>
</tr>
</tbody>
</table>

| Intercept Women (N = 1,084) | -0.180\~ | 0.602 | -2.071 | -2.053 |
| Father’s class | | | | |
| I/II | 1.495 | 0.483\~ | 0.459\~ | 0.262\~ |
| III  | 0.483\~ | 0.692 | 0.225\~ | 0.397\~ |
| IVabc| 0.459\~ | 0.225\~ | 2.052 | 1.183 |
| V/VI | 0.262\~ | 0.397\~ | -1.280\~ | 0.443\~ |
| VIIab| 0\a | 0\a | 0\a | 0\a |

*Selection: less than ten years after leaving school, ever employed, no missing information
~ denotes insignificance (p > .05)*
\a denotes reference category
\b denotes no person in category entered occupational class


especially with regard to the small self-employed, and to some extent also for the non-manual classes, and more so for women than for men.

In Table 11.10 we cross-classify, for both men and women, social class by educational attainment. In this and all further tables we present statistics based on the Labour Market Survey. Now we use a class schema comprising seven classes. In contrast to Tables 11.8 and 11.9, we no longer merge Classes I and II, and we divide Class III into Classes IIIa and IIIb. Classes I and II consist of higher-grade and lower-grade professionals (controllers), respectively, and the distinction is mainly one based on necessary schooling and job level. Class IIIa refers to routine non-manual occupations in administration and commerce, whereas Class IIIb refers to routine non-manual occupations in sales and services. The latter difference may be important for establishing differences in occupational achievement between men and women. Going from the lowest to the highest level of education, on the
### Table 11.9. Effects of educational attainment and father’s class on occupational class, relative to Class VIIab, multinomial logit models

<table>
<thead>
<tr>
<th></th>
<th>I/II</th>
<th>III</th>
<th>IVabc</th>
<th>V/VI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men (N = 1,021)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-2.011</td>
<td>-1.756</td>
<td>-2.071</td>
<td>-1.107</td>
</tr>
<tr>
<td>1a: elementary</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>1c: lower vocational</td>
<td>-0.034</td>
<td>0.181</td>
<td>-0.039</td>
<td>1.048</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>2.078</td>
<td>1.312</td>
<td>-0.040</td>
<td>1.095</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>1.538</td>
<td>1.722</td>
<td>-0.592</td>
<td>0.609</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>2.408</td>
<td>1.830</td>
<td>0.472</td>
<td>0.032</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>4.171</td>
<td>2.285</td>
<td>-0.481</td>
<td>0.948</td>
</tr>
<tr>
<td>3b: university</td>
<td>4.574</td>
<td>2.555</td>
<td>b</td>
<td>-0.192</td>
</tr>
<tr>
<td><strong>Father’s class:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I/II</td>
<td>0.278</td>
<td>0.374</td>
<td>-0.027</td>
<td>0.162</td>
</tr>
<tr>
<td>III</td>
<td>-0.179</td>
<td>0.724</td>
<td>0.329</td>
<td>-0.439</td>
</tr>
<tr>
<td>IVabc</td>
<td>-0.345</td>
<td>0.215</td>
<td>2.027</td>
<td>-0.471</td>
</tr>
<tr>
<td>V/VI</td>
<td>-0.263</td>
<td>-0.146</td>
<td>-1.189</td>
<td>0.303</td>
</tr>
<tr>
<td>VIIab</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td><strong>Women (N = 1,084)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-2.343</td>
<td>0.028</td>
<td>-4.516</td>
<td>-3.323</td>
</tr>
<tr>
<td>1a: elementary</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>1c: lower vocational</td>
<td>0.204</td>
<td>-0.175</td>
<td>-0.175</td>
<td>1.616</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>1.844</td>
<td>0.697</td>
<td>0.121</td>
<td>0.513</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>1.588</td>
<td>1.294</td>
<td>1.520</td>
<td>1.468</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>2.301</td>
<td>0.893</td>
<td>0.543</td>
<td>1.275</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>4.472</td>
<td>1.261</td>
<td>1.579</td>
<td>1.743</td>
</tr>
<tr>
<td>3b: university</td>
<td>5.312</td>
<td>1.384</td>
<td>b</td>
<td>2.500</td>
</tr>
<tr>
<td><strong>Father’s class:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I/II</td>
<td>0.786</td>
<td>0.505</td>
<td>1.938</td>
<td>0.659</td>
</tr>
<tr>
<td>III</td>
<td>-0.467</td>
<td>0.490</td>
<td>1.011</td>
<td>-0.834</td>
</tr>
<tr>
<td>IVabc</td>
<td>0.110</td>
<td>0.168</td>
<td>2.017</td>
<td>-1.230</td>
</tr>
<tr>
<td>V/VI</td>
<td>0.269</td>
<td>0.361</td>
<td>1.914</td>
<td>0.530</td>
</tr>
<tr>
<td>VIIab</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
</tbody>
</table>

**Selection:** less than ten years after leaving school, ever employed, no missing information

~ denotes insignificance (p > .05)

* denotes reference category

b denotes no person in category entered occupational class

**Source:** Mobility File 1985–1992.
whole the proportion of those in a semi-skilled or unskilled manual job drops, and the proportion in the service class rises.

On the lowest level we observe again that more than half of men with some vocational training (1c) attain positions in the skilled manual class, and 31 per cent find their first jobs in the semi-skilled and unskilled classes. Only a small fraction finds a non-manual occupation. In general the occupational positions of those with lower vocational training are not distinctively different from persons with only primary education, although they have completed four more years of schooling. The enormous educational expansion which has taken place in the Netherlands turned intermediate and higher vocational training into something of a standard. Those with only lower vocational qualifications are pushed down to lower job levels. It has been shown that employers prefer more highly educated workers for the same jobs (Huijgen 1989), and those with primary schooling and low vocational training have to compete for the remaining lower grade jobs. However, it is remarkable that 40 per cent of those without any qualification enter a skilled manual job. Apparently in the Dutch case, the link between educational qualifications and jobs in manufacturing is quite weak.

Sex segregation in the Dutch labour market is such that women never have worked in skilled manual jobs. Women with lower education who entered the labour market in the 1980s found jobs in either semi-skilled and unskilled jobs or in the routine non-manual jobs. For women too the difference between those with only primary education and those with low vocational training is small. Yet some vocational training seems to increase the probability of entering a job in administration or in personal services (hairdressers, cleaners, etc.).

On the intermediate level we see important differences between those with intermediate vocational training (2a), intermediate general education (2b), and higher general education (2c). The chances for a higher class job of people with intermediate general education are significantly worse than those for the two other categories, which holds for men and women, although they are somewhat better than those of people on the low levels of education (1a and 1c). People with intermediate general education are more likely than those with intermediate vocational education to be found in semi-skilled or unskilled manual occupations and in routine non-manual jobs. Intermediate vocational training brings opportunities to enter the non-manual class, but mainly so in routine jobs. About 15 per cent of all men and women with intermediate vocational training enter Class II of lower controllers. For men, a higher general education brings more occupational chances than for women. About 25 per cent of them obtain jobs in the service class, as opposed to only 14 per cent of women with higher general education. On the other hand, we observe that higher general education is far
<table>
<thead>
<tr>
<th>Educational attainment</th>
<th>1ab</th>
<th>lc</th>
<th>2a</th>
<th>2b</th>
<th>2c</th>
<th>3a</th>
<th>3b</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher controllers (I)</td>
<td>0.7%</td>
<td>0.7%</td>
<td>3.7%</td>
<td>2.2%</td>
<td>4.6%</td>
<td>22.2%</td>
<td>50.9%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Lower controllers (II)</td>
<td>2.4%</td>
<td>2.8%</td>
<td>15.7%</td>
<td>8.0%</td>
<td>20.4%</td>
<td>52.1%</td>
<td>38.2%</td>
<td>19.1%</td>
</tr>
<tr>
<td>Administration/commerce (IIIa)</td>
<td>2.2%</td>
<td>3.7%</td>
<td>12.4%</td>
<td>17.3%</td>
<td>35.4%</td>
<td>13.6%</td>
<td>7.5%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Sales/personal services (IIIb)</td>
<td>2.6%</td>
<td>4.0%</td>
<td>6.9%</td>
<td>11.8%</td>
<td>6.5%</td>
<td>4.0%</td>
<td>1.0%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Self-employed (IVabcd)</td>
<td>7.2%</td>
<td>6.6%</td>
<td>7.5%</td>
<td>4.4%</td>
<td>4.1%</td>
<td>1.1%</td>
<td>0.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Skilled manual (V/VI)</td>
<td>40.0%</td>
<td>51.4%</td>
<td>39.5%</td>
<td>27.1%</td>
<td>12.0%</td>
<td>4.7%</td>
<td>1.0%</td>
<td>31.0%</td>
</tr>
<tr>
<td>Semi/unskilled manual (VII)</td>
<td>45.0%</td>
<td>30.8%</td>
<td>14.3%</td>
<td>29.3%</td>
<td>16.9%</td>
<td>2.2%</td>
<td>1.2%</td>
<td>18.5%</td>
</tr>
<tr>
<td><strong>Number of individuals</strong></td>
<td>458</td>
<td>1,464</td>
<td>2,076</td>
<td>451</td>
<td>367</td>
<td>980</td>
<td>574</td>
<td>6,370</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher controllers (I)</td>
<td>0.4%</td>
<td>0.1%</td>
<td>0.8%</td>
<td>1.2%</td>
<td>1.9%</td>
<td>5.4%</td>
<td>41.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Lower controllers (II)</td>
<td>3.6%</td>
<td>3.5%</td>
<td>15.5%</td>
<td>6.7%</td>
<td>12.2%</td>
<td>50.1%</td>
<td>43.8%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Administration/commerce (IIIa)</td>
<td>13.0%</td>
<td>20.2%</td>
<td>29.9%</td>
<td>41.3%</td>
<td>51.5%</td>
<td>25.1%</td>
<td>11.4%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Sales/personal services (IIIb)</td>
<td>19.8%</td>
<td>27.3%</td>
<td>32.4%</td>
<td>25.0%</td>
<td>19.2%</td>
<td>14.8%</td>
<td>1.3%</td>
<td>24.2%</td>
</tr>
<tr>
<td>Self-employed (IVabcd)</td>
<td>4.0%</td>
<td>4.0%</td>
<td>1.7%</td>
<td>1.9%</td>
<td>1.9%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Skilled manual (V/VI)</td>
<td>9.3%</td>
<td>9.0%</td>
<td>3.1%</td>
<td>4.0%</td>
<td>3.6%</td>
<td>0.4%</td>
<td>0.3%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Semi/unskilled manual (VII)</td>
<td>49.8%</td>
<td>35.8%</td>
<td>16.6%</td>
<td>20.0%</td>
<td>9.6%</td>
<td>3.5%</td>
<td>1.9%</td>
<td>16.9%</td>
</tr>
<tr>
<td><strong>Number of individuals</strong></td>
<td>247</td>
<td>766</td>
<td>2,312</td>
<td>581</td>
<td>468</td>
<td>1,165</td>
<td>315</td>
<td>5,854</td>
</tr>
</tbody>
</table>

Selection: less than ten years after leaving school, employed, no missing information

from a guarantee for success on the labour market. Large proportions end up in routine non-manual jobs (women more than men) or in semi/unskilled jobs (especially men).

For men, higher education is almost a guarantee to find a job in the service class. However, differences between higher vocational training and a university degree are salient insofar as the former prepares for a job in Class II, and the latter for a job in Class I. The chances for women with higher vocational education to enter the highest social class are much lower than for men with the same level of education. At the university level, the opportunities of men and women are more equal, although even here men are in a somewhat better position in the labour market.

In Table 11.11 we use a multinomial logit model to analyse the cross-classification of occupational class by educational attainment. The model in Table 11.11 uses all the available degrees of freedom and estimates 36 effects. These 36 effects in the model are very significant for both men and women. The Chi-squared test against the hypothesis that all effects are zero has 36 degrees of freedom and yields for men in a $\chi^2$ of 4,067 points, and for women in a $\chi^2$ of 2,415 points. The number of parameters is too high to interpret them tidily, but of course the results of this bivariate analysis resemble the outcomes of the descriptive Table 11.10 to a large extent. Once again, the difference in occupational achievement between primary education and low vocational training is small, but it is now clear that those with low vocational training have a somewhat better chance of entering the non-manual Classes IIIa and IIIb than persons with only primary education. The occupational opportunities of those with intermediate education are much higher, but we see clear differences within this level. Intermediate vocational training and higher general schooling give more chances than intermediate general schooling, especially for entry to the service classes, Classes I and II. Higher vocational training and university education have superior value on the Dutch labour market, and from a class perspective the higher value of a university education above a vocational training is clear. Apparently, the lower employment rates of academics are compensated by higher job levels. These patterns are similar for women and for men, but on the whole the returns of education are higher for men.

In Table 11.12 we again focus on the contrast between educational attainment as a nominal variable (a set of dummy variables), and the measure of years of schooling. This model estimates only 6 effects, and the Chi-square test with 6 degrees of freedom tells that these effects are significantly different from zero. For men the $\chi^2$ is 3,383 points, and for women 1,935 points. A comparison of the models in Table 11.12 and those in Table 11.11, shows that the 30 extra effects in the model with educational attainment as a categorical variable are significant ($\chi^2 = 684.1$ for men, and 479.7 for
### Table 11.1
Effects of educational attainment on occupational class, relative to Class VIIab, multinomial logit models

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>IIIa</th>
<th>IIIb</th>
<th>IVabc</th>
<th>V/VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-4.229</td>
<td>-2.930</td>
<td>-3.025</td>
<td>-2.843</td>
<td>-1.831</td>
<td>-0.118</td>
</tr>
<tr>
<td>la: elementary</td>
<td>0</td>
<td>0a</td>
<td>0a</td>
<td>0a</td>
<td>0a</td>
<td>0b</td>
</tr>
<tr>
<td>lc: lower vocational</td>
<td>0.420~</td>
<td>0.532~</td>
<td>0.903</td>
<td>0.809</td>
<td>0.284~</td>
<td>0.631</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>2.883</td>
<td>3.023</td>
<td>2.884</td>
<td>2.122</td>
<td>1.191</td>
<td>1.139</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>1.649</td>
<td>1.631</td>
<td>2.499</td>
<td>1.930</td>
<td>-0.056~</td>
<td>0.040~</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>2.935</td>
<td>3.120</td>
<td>3.766</td>
<td>1.894</td>
<td>0.412~</td>
<td>-0.225~</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>6.553</td>
<td>6.075</td>
<td>4.825</td>
<td>3.415</td>
<td>1.138</td>
<td>0.856</td>
</tr>
<tr>
<td>3b: university</td>
<td>7.960</td>
<td>6.373</td>
<td>4.841</td>
<td>2.689</td>
<td>-0.115~</td>
<td>-0.036~</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi²</td>
<td>4067.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-4.812</td>
<td>-2.615</td>
<td>-1.346</td>
<td>-0.920</td>
<td>-2.510</td>
<td>-1.677</td>
</tr>
<tr>
<td>la: elementary</td>
<td>0</td>
<td>0a</td>
<td>0a</td>
<td>0a</td>
<td>0a</td>
<td>0b</td>
</tr>
<tr>
<td>lc: lower vocational</td>
<td>-0.801~</td>
<td>0.298~</td>
<td>0.777</td>
<td>0.650</td>
<td>0.330~</td>
<td>0.298~</td>
</tr>
<tr>
<td>2a: intermediate vocational</td>
<td>1.752~</td>
<td>2.545</td>
<td>1.935</td>
<td>1.588</td>
<td>0.223~</td>
<td>0.003~</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>2.005</td>
<td>1.525</td>
<td>2.073</td>
<td>1.144</td>
<td>0.154~</td>
<td>0.059~</td>
</tr>
<tr>
<td>2c: higher general</td>
<td>3.203</td>
<td>2.851</td>
<td>3.025</td>
<td>1.614</td>
<td>0.900</td>
<td>0.703~</td>
</tr>
<tr>
<td>3a: higher vocational</td>
<td>5.242</td>
<td>5.271</td>
<td>3.310</td>
<td>2.360</td>
<td>0.742~</td>
<td>-0.427~</td>
</tr>
<tr>
<td>3b: university</td>
<td>7.888</td>
<td>5.750</td>
<td>3.138</td>
<td>0.515~</td>
<td>b</td>
<td>-0.115~</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi²</td>
<td>2414.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Selection: less than ten years after leaving school, employed, no missing information

~ denotes insignificance (p > .05)
a denotes reference category
b denotes no person in category entered occupational class


women, ndf = 30). This means that for both men and women a multinomial logit model predicting the odds of being in one of the seven occupational classes with a continuous variable for years of schooling describes the pattern of association between education and occupation worse than a multinomial model predicting class from a categorical level of education. The parameters of the model with years of education show that the ranking of the classes from I to VII is strictly ordinal with regard to years of education. The more years of education, the greater the likelihood of entering a job in a 'higher' class, going from Class VII to Class I.
TABLE 11.12. Effect of years of education on occupational class, relative to Class V/VI, multinomial logit models

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>IIIa</th>
<th>IIIb</th>
<th>IVabc</th>
<th>V/VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>6,370</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-15.964</td>
<td>-10.328</td>
<td>-6.056</td>
<td>-4.737</td>
<td>-3.088</td>
<td>-0.836</td>
</tr>
<tr>
<td>Years of education</td>
<td>1.149</td>
<td>0.823</td>
<td>0.475</td>
<td>0.310</td>
<td>0.168</td>
<td>0.127</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi²</td>
<td>3382.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>5,854</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of education</td>
<td>1.224</td>
<td>0.727</td>
<td>0.282</td>
<td>0.223</td>
<td>0.037~</td>
<td>-0.019~</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi²</td>
<td>1935.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Selection: less than ten years after leaving school, employed, no missing information
~ denotes insignificance (p > .05)


CONCLUSION

In the Netherlands the relationship between education and occupational position is far from tight for the cohort which entered the labour market in the 1980s. Occupational class is very scattered, especially for those with intermediate levels of education: those with low levels of educational attainment arrive in the skilled or unskilled manual class (men), or in the routine non-manual and unskilled manual class (women); those with high levels of educational attainment obtain positions in the service class, be it the class of the high controllers (university graduates), or the class of the low controllers (higher vocational schooling); but people with intermediate levels of education, who form half of the labour force in this labour-market cohort, are already widely dispersed in this early phase of their working life. One of the most important reasons for this finding is in the developments on the Dutch labour market, where supply and demand of educational qualifications are not balanced. The highly educated so far have not experienced major disadvantages of these developments, because they could enter service-class jobs previously occupied by some of those with intermediate education. On the other side of the spectrum, it is obvious that the lower educated are being pushed to the lowest jobs, or out of the labour market altogether. Those with
intermediate education are now in a dubious position. If the changes in
the qualitative structure of the Dutch labour market do not keep pace with the
growth of individuals with higher educational qualifications, the position of
those with intermediate schooling will deteriorate disproportionately in the
future, and the—still high—value of higher education will also diminish.

In the mid-1990s, about 75 per cent of the newcomers on the Dutch
labour market have vocational training. Intermediate and higher vocational
training offer large advantages with regard to employment and job security,
but low vocational training now hardly offers more chances than primary ed-
cation alone. The worth of an academic degree is somewhat ambiguous inso-
far as it facilitates entry into the highest occupations, but carries a greater
risk of unemployment than vocational training. In addition, university grad-
uates work more frequently in temporary and part-time jobs. This suggests
that employers are sometimes uncertain as to the value of this qualification.

Two other findings on the Netherlands deserve attention. First, we have
shown that value of educational qualifications is lower for women than for
men, also for the young cohort featured in this study, which should be
explained by demand and supply effects. In the Netherlands, childcare is a
woman's job, and more than 90 per cent of women stop full-time work on
the birth of their first child. Anticipation of, and concentration on domestic
duties and limited work hours have a negative impact on career develop-
ment. Demand side effects may also be present. Employers tend to treat all
women alike which leads to statistical discrimination. Second, we observed
(again) that these days direct effects of father's occupation on the occupa-
tional attainment are hardly present in the Netherlands. It is education
which links origin and destination nowadays.

This analysis started by accepting the issue of testing the hypothesis that
in a highly industrialized country such as the contemporary Netherlands the
relation between education and occupation during the first years of the work-
life can be captured by a single parameter between two continuous vari-
bles, against the hypothesis that this association is a relation between two
categorical variables best described by a multitude of parameters. The result
of the analyses performed here is that the relation between education and
occupation in the Netherlands around 1990, is depicted less well by one
parameter between two continuous variables, than by all the parameters pos-
sible for a relation between two categorical variables.

The proposed educational schema for educational attainment devised for
comparative purposes for application fits well to the education—occupation
link in the Netherlands, but must be specified in one respect. Whereas the
proposed schema places intermediate general education and intermediate
vocational education on the same footing, in the Netherlands intermediate
vocational education ranks above intermediate general education. This
ranking is not only indicated by the choices people have to make within the Dutch educational system—intermediate vocational education comes logi­cally after intermediate general education—but also by the relation between education and occupational prestige. People with intermediate vocational education have on average more occupational prestige than people with intermediate general education.

In the Netherlands, the relation between educational attainment and occupation as both a continuous variable (prestige), and as a categorical vari­able (class), is described better by treating education as a nominal variable (a set of dummy variables), than by education continuously measured. However, we do not want to abandon the linear approach, because this issue brings us back to Featherman and Hauser’s (1978: 261) attempt to describe the relation between continuous education and continuous occupational status not by one linear function, but by a spline function combining two linear functions. Casual inspection of Table 11.4 makes clear that one additional year of education at first does not contribute much, but more at later levels of the educational scale. Perhaps the relatively slow structural change on the labour market and the much faster educational expansion make the difference in value between qualifications on the lower and the intermediate level much lower than the value difference between qualifica­tions on the intermediate and the high level.

NOTES

1. It is estimated that in around 1650, between 4 to 5 per cent of Dutch men had at some time studied at an athenaeum or academy. At the end of the seventeenth century this percentage had dropped to 2.5, and at the end of the eighteenth century to 1.3 (Otterspeer 1992: 19).

2. The percentage of men who signed their marriage certificate in Amsterdam by writing their name was 57 in 1630, and rose steadily to 85 in 1780 (Hart 1976: 131). The percentage of women who did so rose in the same period from 32 to 64.

3. Employers, labour unions, and staff of organizations overseeing disability schemes colluded to an inflow in disability schemes well above what under conditions of full employment would have been the case. The regulations were such that a disabled person has a higher income than a long-term unemployed person.

4. In our sample, respondents in all educational categories have between zero and ten years of labour-market experience by design, and there will be no association between educational attainment and experience. Therefore, the effects of educa­tional attainment on occupational outcomes are not attenuated by the effects of experience and we can estimate an overall effect of education on occupation for those who have not been in the labour market for more than ten years. One may
wonder, however, whether the effect of education changes during the first ten years on the labour market. In Table 11.7, we report the effect of years of education on occupational prestige to be 4.7 for men and 3.2 for women. A breakdown of this effect by experience reveals that the effect does not vary strongly over the early career, with one exception—for respondents with no experience the effect is only 3.3 for men and 2.2 for women. The reason for the small effects for those who only just arrived on the labour market may be that they will often have temporary, and less serious, jobs. The relationship between education and occupation stabilizes after one to two years on the labour market, and the overall effect for those who have been between zero and ten years in the labour market gives a reliable estimate of the effect of education on occupation.
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